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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,654	02/14/2002	Stanley S. Toncich	UTL 00161	5491

7590 02/28/2003

Kyocera Wireless Corp.  
Att: Patent Department  
PO Box 928289  
San Diego, CA 92192-8289

EXAMINER

BETTENDORF, JUSTIN P

ART UNIT PAPER NUMBER

2817

DATE MAILED: 02/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/077,654

Applicant(s)

TONCICH, STANLEY S.

Examiner

Justin P. Bettendorf

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### **DETAILED ACTION**

1. The information disclosure statement filed 10/8/02 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered with respect to cite no. 56.


#### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the control lines and control source as recited in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "97" in figure 5. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

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4. Claims 1-12 are objected to because of the following informalities: The preamble of the claims recites "a tunable isolator" but the body of the claims recite an isolator as an element with

additional elements connected thereto; therefore, the examiner suggests changing the preamble to --a tunable isolator circuit-- to avoid any possible confusion. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

*JB* 6. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons United States Patent No. 3,676,803 in view of Nakamichi et al. EP 0909024 A2 (both cited by the applicant).

The Simmons reference discloses in figure 2 an isolator (see col. 2, lines 56-57) with electronically tunable matching circuits A-C serving as input, output, and isolation matching networks, respectively (see figure 2). The reference discloses bias ports 14 that control the diode varactors 2a-2c (i.e. voltage tunable capacitors); however, a ferroelectric varactor (i.e. tunable capacitor) is not shown.

The Nakamichi et al. reference discloses in figure 1 a ferroelectric variable capacitor (i.e., voltage tunable) {see [0014, 0015, 0018, 0024]}. As would have been well known, the ferroelectric voltage tunable capacitor offers the advantage over semiconductor varactors of not being susceptible to overheating and burnout as well as having a larger capacitance range.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted art-recognized equivalent ferroelectric tunable capacitors of

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Nakamichi et al. in place of the semiconductor tunable capacitors (i.e. varactor diodes) in the isolator circuit of Simmons because such a substitution of art-recognized equivalent varactors would have advantageously provided better overheating/burnout protection and a larger capacitance range. With respect to control lines and control source, such a modification would have been required because the tunable devices are controlled electronically as suggested by both Simmons (col. 3, lines 1-3) and Nakamichi et al. (see [0049]).

With respect to claim 3, it would have been obvious to one of ordinary skill in the art at the time of the invention to have mounted the isolator and matching circuits directly to a substrate as a multi-chip module (MCM) or on a circuit board (which meets the broadest, reasonable interpretation of a substrate) because, as the reference is silent as to how they are physically constructed, any art-recognized equivalent physical construction would have been usable such as the well-known MCM or circuit board construction.

With respect to the limitations of use of the matching circuits as an amplifier-to-isolator matching circuit and/or isolator-to-multiplexer matching circuit for matching circuits A and C as recited in claims 4 and 8, it should be noted that use of an isolator in a communication device with power amplifiers and multiplexers is well known and such a modification would have been obvious based on the desired use.

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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- a. Bernard et al. United States Patent No. 4,236,125 discloses a circulator with variable impedance matching circuits 39, 40.
- b. Green, Jr. United States Patent No. 5,701,595 discloses an isolator in figure 2 connected between a duplexer 40 and amplifier 22.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin P. Bettendorf whose telephone number is (703) 308-2780. The examiner can normally be reached on 6:00-3:30 (M-F, 1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Justin P. Bettendorf  
Primary Examiner  
Art Unit 2817

jpb  
February 21, 2003